REMARKS

The final office action of June 14, 2006 has been reviewed and its contents carefully noted. Reconsideration of this case, as amended, is requested. Claims 1 through 5 remain in this case, claims 2-3 being amended by this response.

**Statement Of The Substance Of The Interview**

The Applicant's agent, Meghan Van Leeuwen, had a telephone interview with the Examiner, Deborah Ware, on September 14, 2006.

There were no exhibits shown or demonstrations exhibited during the telephonic interview.

All of the pending claims were discussed in the interview. Granados (1994), prior art of record, was discussed during the interview.

The Applicant's agent and the Examiner first discussed the objections to the claims. The Examiner explained that relative is subjective. The Applicant's agent explained that, although relative is sometimes subjective, it is objective here. The Examiner suggesting taking out the language "relative to said parental cell line" and explained that she would discuss this language with her supervisor.

The Applicant's agent and the Examiner also discussed adding the cloned language to claims 2 and 3. The Examiner stated that she was unsure if the Applicant could get claims 1-3 and claims 4-5 allowed, because they were the same. The Applicant's agent explained that the claims are not identical, and therefore both sets should be allowed. The Examiner stated that she would discuss this further with her supervisor.

The Applicant's agent and the Examiner then discussed the 102/103 rejection over Granados (1994). The Applicant's agent explained that the cloned cell line in the reference (BTI-Tn-5B1-4) was not the same as the cell lines in the present application, which were cloned from BTI-Tn-5B1-4. The Examiner then stated that the BTI-Tn-5B1-4 has the same characteristics as the cell lines in the present claims. The Applicant's agent disagreed,

explaining that the characteristics of the cell lines claimed in the present application were different than the characteristics of BTI-Tn-5B1-4.

The Examiner then asked the Applicant's agent to show where in the application it shows the improved characteristics of the claimed cell lines. The Applicant's agent and the Examiner reviewed Figures 1-3, in turn, which show each of the improved characteristics of the new cell lines. After reviewing these Figures, the Examiner agreed that there were differences between the claimed cell lines and BTI-Tn-5B1-4 disclosed in Granados (1994).

The Examiner explained that she would need to discuss the interview with her Primary Examiner before making any final decisions regarding allowability. She agreed to speak to her Primary Examiner as soon as possible. The Applicant's agent explained that, since September 14 was the deadline for response, she would file the response today, and await additional correspondence from the Examiner by telephone.

**Objections to the Claims**

Claims 1-5 were objected to for the use of the term "relative". Applicant respectfully disagrees with this rejection.

The Examiner states that relative is a subjective term. However, in the context of claims 1 through 3, the claimed cloned cell line has objectively determinable properties relative to the parental cell line BTI-TN-5B1-4. These properties are increased production of baculovirus particles, increased expression of foreign proteins using a baculovirus expression system, and increased resistance to cell culture stress. These are not subjective properties; they are objective properties and are easily ascertainable by one skilled in the art.

The Applicant also respectfully points out that claims 4 and 5 do not use the term "relative".

The Examiner also suggested the addition of "cloned" before each occurrence of "cell line" in claims 2-5 for consistency. Cloned has been added to claims 2 and 3. Since claims 4 and 5 are not dependent on claims 1 through 3 and "isolated cell line" is clear, the original claim language has been maintained for claims 4 and 5.

Reconsideration and withdrawal of the objection is respectfully requested.

**Rejection under 35 U.S.C. §102**

Claims 1-5 were rejected under 35 U.S.C. 102(b) as being anticipated by Granados et al. (1994).

Applicant respectfully disagrees with the rejection.

Claim 1 reads "a cloned cell line, derived from parental cell line BTI-TN-5B1-4, wherein said cloned cell line possesses the properties of increased production of baculovirus particles, increased expression of foreign proteins using a baculovirus expression system, and increased resistance to cell culture stress, relative to said parental cell line".

The cloned cell line claimed in claim 1 is a cell line derived from parental cell line BTI-TN-5B1-4. It clearly differs from parental cell line BTI-TN-5B1-4, because it has increased production of baculovirus particles, increased expression of foreign proteins using a baculovirus expression system, and increased resistance to cell culture stress, relative to BTI-TN-5B1-4. These characteristics are shown in Figures 1-3 of the present application. For example, the increased expression of foreign proteins is discussed in the application. "More particularly, the two clonal lines, H5CL-B and H5CL-F possess superior productivity of AcMNPV and recombinant ß-galactosidase and SEAP. The new clones outperform the High 5 cells to the following extent: at 6 days after infection with a r-baculovirus with the B-gal gene, clones B and F produce 1.3x and 1.5x more Beta Gal, respectively, than the High 5 cells. At 9 days after infection with the virus carrying the SEAP gene, clones B and F produce 2x more secreted SEAP than the High 5 cells." (present application, page 8, lines 23-29, see also Fig. 3).

The Examiner states that "Granados et al teach cloned cell line derived from BTI-TN-5B1-4 having properties of increased production of baculovirus particles and increased expression of foreign proteins." (present office action dated June 14, 2006, page 3, lines 5-8). However, this statement is incorrect; Granados et al actually teach BTI-TN-5B1-4 itself, not cell lines derived from BTI-TN-5B1-4.

The paper states that it presents "[t]he replication of Trichoplusia ni SNPV (TNSNPV) in a new Lepidopteran cell line, BTI-TN-5B1-4 (TN-5B1-4)" (page 260, col. 1, lines 1-3). In the paper, the authors "discuss the establishment of a clonal cell line, BTI-TN-5B1-4 (TN-5B1-

4)...." (page 260, col. 2, lines 15-16). In Granados et al., the parental cell line is BTI-TN-5B1, and BTI-TN-5B1-4 is derived from that parental cell line (see abstract, page 260, lines 22-23). Granados et al. teach BTI-TN-5B1-4, not any cell lines derived from BTI-TN-5B1-4.

The BTI-TN-5B1-4 cell line was specifically discussed in the present application. "BTI-TN-5B1-4 (sold by Invitrogen under the trade name "High 5" cells), as well as IPLB-SF 21 and its clone (Sf9), are the most widely used insect cell lines for the baculovirus expression vector system (Granados *et al.*, J. Invertebr. Pathol., 1994, 64, 260-266; O'Reilly *et al.*, 1992, Baculovirus expression vectors, A laboratory manual, W.H. Freeman and Company, NY). In most instances, High 5 cells provide superior production of recombinant proteins compared to Sf9 cells (Shuler *et al.*, 1995, Baculovirus Expression Systems and Biopesticides, Wiley-Liss Inc., NY.). This high productivity is more evident in low passage culture of High 5 cells in comparison with high passage cells (Donaldson and Shuler, 1998, Biotechnol. Prog., 14, 543-547). This suggests that High 5 cells may be susceptible to detrimental effects associated with long term culturing" (present application, page 2, line 29 through page 3, line 8).

In contrast, claim 1 specifically claims a cell line derived from BTI-TN-5B1-4, that has different properties than BTI-TN-5B1-4 including increased production of baculovirus particles, increased expression of foreign proteins using a baculovirus expression system, and increased resistance to cell culture stress.

Therefore claim 1 is not anticipated by Granados et al. (1994). Claims 2 and 3, being dependent upon and further limiting claim 1, should also be allowable for that reason, as well as for the additional recitations they contain. Reconsideration and withdrawal of the rejection are respectfully requested.

Claim 4 reads "an isolated cell line derived from eggs of Trichoplusia ni, having all the identifying characteristics of H5CL-B". As discussed throughout the present application, H5CL-B is a cloned cell line derived from BTI-TN-5B1-4, and it has different characteristics than BTI-TN-5B1-4. "An embodiment of the invention provides two new isolated homogeneous cell lines, designated H5CL-B and H5CL-F (both of which are derived from the parental cell line BTI-TN-5B1-4, ATCC CRL 10859), wherein said novel cell lines possess the properties of increased production of baculovirus particles, increased expression of foreign proteins using a baculovirus

expression system, and increased resistance to cell culture stress" (present application, page 3, lines 14-19). Cell line H5CL-B is not disclosed in Granados et al. Instead, the parental cell line, from which H5CL-B is derived, was disclosed.

Therefore, claim 4 is not anticipated by Granados et al. Reconsideration and withdrawal of the rejection is respectfully requested.

Claim 5 reads "an isolated cell line derived from eggs of Trichoplusia ni, having all the identifying characteristics of H5CL-F". As discussed throughout the present application, H5CL-F is a cloned cell line derived from BTI-TN-5B1-4 and it has different characteristics than BTI-TN-5B1-4. "An embodiment of the invention provides two new isolated homogeneous cell lines, designated H5CL-B and H5CL-F (both of which are derived from the parental cell line BTI-TN-5B1-4, ATCC CRL 10859), wherein said novel cell lines possess the properties of increased production of baculovirus particles, increased expression of foreign proteins using a baculovirus expression system, and increased resistance to cell culture stress" (present application, page 3, lines 14-19). Cell line H5CL-F is not disclosed in Granados et al. Instead, the parental cell line, from which H5CL-F is derived, was disclosed.

Therefore, claim 5 is not anticipated by Granados et al. Reconsideration and withdrawal of the rejection is respectfully requested.

**Rejection under 35 U.S.C. §103**

Claims 1-5 were rejected under 35 U.S.C. 103 as being anticipated by Granados et al. (1994).

Applicant respectfully disagrees with the rejection.

Claim 1 reads "a cloned cell line, derived from parental cell line BTI-TN-5B1-4, wherein said cloned cell line possesses the properties of increased production of baculovirus particles, increased expression of foreign proteins using a baculovirus expression system, and increased resistance to cell culture stress, relative to said parental cell line".

The cloned cell line claimed in claim 1 is a cell line derived from parental cell line BTI-TN-5B1-4. It clearly differs from parental cell line BTI-TN-5B1-4, because it has increased

production of baculovirus particles, increased expression of foreign proteins using a baculovirus expression system, and increased resistance to cell culture stress, relative to BTI-TN-5B1-4.

The Examiner states that "Granados et al teach cloned cell line derived from BTI-TN-5B1-4 having properties of increased production of baculovirus particles and increased expression of foreign proteins." (present office action dated June 14, 2006, page 3, lines 5-8). However, this statement is incorrect; Granados et al actually teach BTI-TN-5B1-4 itself, not cell lines cloned from BTI-TN-5B1-4.

The paper states that it presents "[t]he replication of Trichoplusia ni SNPV (TNSNPV) in a new Lepidopteran cell line, BTI-TN-5B1-4 (TN-5B1-4)" (page 260, col. 1, lines 1-3). In the paper, the authors "discuss the establishment of a clonal cell line, BTI-TN-5B1-4 (TN-5B1-4)…." (page 260, col. 2, line15-16). In Granados et al., the parental cell line is BTI-TN-5B1, and BTI-TN-5B1-4 is derived from that parental cell line (see abstract, page 260, lines 22-23). Granados et al. teach BTI-TN-5B1-4, they do not teach or suggest any cell lines derived from BTI-TN-5B1-4.

The BTI-TN-5B1-4 cell line was specifically discussed in the present application. "BTI-TN-5B1-4 (sold by Invitrogen under the trade name "High 5" cells), as well as IPLB-SF 21 and its clone (Sf9), are the most widely used insect cell lines for the baculovirus expression vector system (Granados *et al.*, J. Invertebr. Pathol., 1994, 64, 260-266; O'Reilly *et al.*, 1992, Baculovirus expression vectors, A laboratory manual, W.H. Freeman and Company, NY). In most instances, High 5 cells provide superior production of recombinant proteins compared to Sf9 cells (Shuler *et al.*, 1995, Baculovirus Expression Systems and Biopesticides, Wiley-Liss Inc., NY.). This high productivity is more evident in low passage culture of High 5 cells in comparison with high passage cells (Donaldson and Shuler, 1998, Biotechnol. Prog., 14, 543-547). This suggests that High 5 cells may be susceptible to detrimental effects associated with long term culturing". (present application, page 2, line 29 through page 3, line 8).

In contrast, claim 1 specifically claims a cell line derived from BTI-TN-5B1-4, that has different properties than BTI-TN-5B1-4 including increased production of baculovirus particles, increased expression of foreign proteins using a baculovirus expression system, and increased resistance to cell culture stress.

Granados et al. do not teach or suggest cell lines derived from BTI-TN-5B1-4 that have the properties listed in claim 1. Therefore claim 1 is not obvious over Granados et al. (1994). Claims 2 and 3, being dependent upon and further limiting claim 1, should also be allowable for that reason, as well as for the additional recitations they contain. Reconsideration and withdrawal of the rejection are respectfully requested.

Claim 4 reads "an isolated cell line derived from eggs of Trichoplusia ni, having all the identifying characteristics of H5CL-B". As discussed throughout the present application, H5CL-B is a cloned cell line derived from BTI-TN-5B1-4, and it has different characteristics than BTI-TN-5B1-4. "An embodiment of the invention provides two new isolated homogeneous cell lines, designated H5CL-B and H5CL-F (both of which are derived from the parental cell line BTI-TN-5B1-4, ATCC CRL 10859), wherein said novel cell lines possess the properties of increased production of baculovirus particles, increased expression of foreign proteins using a baculovirus expression system, and increased resistance to cell culture stress" (present application, page 3, lines 14-19). Cell line H5CL-B is not taught or suggested in Granados et al. Granados et al. only teaches the parental cell line, from which H5CL-B was derived.

Therefore, claim 4 is not obvious over Granados et al. Reconsideration and withdrawal of the rejection is respectfully requested.

Claim 5 reads "an isolated cell line derived from eggs of Trichoplusia ni, having all the identifying characteristics of H5CL-F". As discussed throughout the present application, H5CL-F is a cloned cell line derived from BTI-TN-5B1-4 and it has different characteristics than BTI-TN-5B1-4. "An embodiment of the invention provides two new isolated homogeneous cell lines, designated H5CL-B and H5CL-F (both of which are derived from the parental cell line BTI-TN-5B1-4, ATCC CRL 10859), wherein said novel cell lines possess the properties of increased production of baculovirus particles, increased expression of foreign proteins using a baculovirus expression system, and increased resistance to cell culture stress" (present application, page 3, lines 14-19). Cell line H5CL-F is not taught or suggested in Granados et al. Granados et al. only teaches the parental cell line, from which H5CL-F was derived.

Therefore, claim 5 is not obvious over Granados et al. Reconsideration and withdrawal of the rejection is respectfully requested.

## Conclusion

Applicant believes the claims, as amended, are patentable over the prior art, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicants' attorney would advance the prosecution of the case to finality, he is invited to telephone the undersigned at the number given below.

"Recognizing that Internet communications are not secured, I hereby authorize the PTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file."

Respectfully Submitted:
*Granados*

By: /mav #45612/
Meghan Van Leeuwen, Reg. No. 45,612
Attorney for Applicant

BROWN & MICHAELS, P.C.
400 M&T Bank Building - 118 N. Tioga St.
Ithaca, NY 14850
(607) 256-2000 • (607) 256-3628 (fax)
e-mail: docket@bpmlegal.com
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